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From: Oman, Jack
Sent: Mon 8/10/2015 5:57:02 PM
Subject: Yerington - FMS Testing Options - Response requested

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Dante and Jeryl,

During the course of implementing the hydraulic test for the FMS Evaporation Ponds B and C the target source of fluid was to be pumped from the VLT Pond to sequentially fill the FMS Evaporation Ponds B and C up to the freeboard level. Once the FMS Evaporation Pond tests were completed the fluid would be pumped/siphoned back to the VLT Pond to maintain the pre-test fluid balance management plan. The proposed test incorporated the use of the existing Godwin Pump to transfer fluid from the VLT Pond to the FMS Evaporation Ponds.

The Godwin Pump was purchased as part of the EPA VLT Relining Project to replace the then existing VLT Pond pump system. The Godwin Pump was selected for purchase by EPA because it is a self-priming pump which negates the need to operate an auxiliary suction-line priming pump. In the VLT Pond Site Operation and Maintenance Manual EPA calculated the Godwin Pump would be able to provide approximately 18 feet of suction lift which would be able to drain a majority of the 20 foot deep VLT pond. The Manual advised setting the pump in a 2 foot depression if the entire pond needed to be emptied to the full 20 foot depth. During transfer of the fluids for the current hydraulic test the Godwin Pump reached its net positive suction head limit at only 12 feet. This correlates with 8 feet of fluid remaining in the VLT pond or approximately 6 feet of the VLT fluid that was no longer available for transfer to complete filling the FMS Evaporation Pond B. This pumping issue will affect planning for all pumping tasks that require removal of fluids from the VLT pond below the depth of 8 feet remaining. In response to the pumping deficiency, submersible pumps were utilized to transfer the FMS Evaporation C Pond inventory to the FMS Evaporation B Pond to continue the test. As of Wednesday the FMS Evaporation Pond C was at 2.6 feet and nearing the operational limit of what can be efficiently transferred to Pond B which is at 7.0'. The test would require approximately 250,000 to 275,000 gallons to complete filling. This volume can only be obtained from the VLT pond or the Slot pond to complete the test as originally planned.

Because of the changed circumstances, the test procedure now requires selecting an alternative to bring the FMS Evaporation Pond B to a conclusion and continue testing of the FMS evaporation Pond C primary liner. The alternatives are as follows:

1. Suspend the FMS Evaporation Pond B filling at the 7.0 foot level, begin the stepped fluid transfer testing to Pond C.

a. Pros:

- i. Pond testing will be completed in an expedient timeframe
- ii. No extra effort needed in bring additional fluid up from the VLT Pond or transfer from the Slot Pond
- iii. Completion of the test will permit fluid management to return to the original pre-test fluid management plan

b. Cons:

iv. The upper foot of remaining capacity does not get tested in the B Pond and most likely not tested in the C Pond as this pond will be filled to a similar near capacity level.

2. **Finish filling the FMS Evaporation Pond B utilizing the VLT Sediment Pond.** Transfer the fluid remaining in the VLT Pond to the VLT Sediment Pond with the submersible pumps, then in turn pump the fluid from the VLT Sediment Pond to the FMS Evaporation Pond B with either the Godwin or Durco Pump.

c. Pros:

- v. Complete the B Pond test up to the 8-foot freeboard level with access to additional make-up fluid as needed to complete the C Pond test up to the 8-foot freeboard level
- vi. Completion of the test will permit fluid management to return to the original pre-test fluid management plan, post-test fluid remaining in the VLT Sediment would be transferred back to the VLT Pond.

d. Cons:

- vii. Additional time and effort needed for set up and transfer from the VLT Pond to the VLT Sediment Pond and in turn to the FMS Evaporation Ponds
- viii. The known probability of activating the VLT Sediment Pond leak detectors as the VLT Sediment Pond primary liner is known to have several defects in it. The VLT Sediment Pond remains as a facility of last resort for fluid transfer.

3. **Finish filling the FMS Evaporation Pond from the Slot Sediment Pond.** This alternative would transfer the fluid from the Slot Sediment Pond directly to the B and C Ponds as necessary to complete the test.

e. Pros:

- ix. The Slot Sediment Pond pump system is already set up to do fluid transfers to the FMS Evaporation Ponds as a normal operational fluid management procedure
- x. The Slot Sediment Pond pump is capable of pumping 260 gallons per minute and would complete the transfer much more quickly than transfer from the VLT Sediment Pond alternative (~2 days)
- xi. Permits completing the hydraulic test up to the 8-foot freeboard level for both FMS Evaporation Ponds B and C

f. Cons:

- xii. Once the 250,000+ gallons are transferred to the evaporation ponds, this fluid will need to be managed within the VLT Pond and FMS Evaporation Pond B and C. This would be a deviation from the pre-test fluid management plan.

4. **Finish filling the FMS Evaporation Pond form a combination of the Slot Sediment Pond and VLT Sediment Pond.** This combination would provide the additional make up fluid from three days of pumping from the VLT Sediment Pond for approximately 110,000 gallons and the remaining ~140,000 gallons from the Slot Sediment Pond.

g. Pros:

- xiii. Permits completing the hydraulic test up to the 8-foot freeboard level for both ponds
- xiv. Decreases the time required for the pump transfers and limits introduction of additional fluid from the Slot Sediment Pond requiring management at the FMS Evaporation Ponds or VLT Pond.

h. Cons:

- xv. Requires additional effort for the VLT Sediment Pond transfer set up
- xvi. Results with additional fluid to manage from the Slot Pond as compared to pre-test fluid management conditions
- xvii. The known probability of activating the VLT Sediment Pond leak detectors as the VLT Sediment Pond primary liner is known to have several defects in it. The VLT Sediment Pond remains as a facility of last resort for fluid transfer.

Atlantic Richfield respectfully requests direction from EPA as soon as possible for completing the referenced evaporation pond tests.

Please let us know if you would like to discuss further. I will be out of the office Wednesday through Friday of this week. Feel free to contact Rich Mattucci and/or John Batchelder in my absence.

Thanks,

-jack

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